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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/661,170	09/11/2003	Richard A. Holl	58035-013100	7505

33717 7590 08/23/2005

GREENBERG TRAURIG LLP  
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SANTA MONICA, CA 90404

EXAMINER
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SOOHOO, TONY GLEN

ART UNIT	PAPER NUMBER
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1723

DATE MAILED: 08/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/661,170

Applicant(s)

HOLL, RICHARD A.

Examiner

Tony G. Soohoo

Art Unit

1723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 5-23-05.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                    | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date. _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-17 are rejected under 35 U.S.C. 103(a) as obvious over Weigl 6136272.

The Weigl reference teaches a mixing device and method of operation whereby there is a flow path with opposed surfaces having a gap whereby within the gap, two materials are moved along within a flow to one another. The flows are adjacent one another thereby having a boundary and are spaced with an inter-diffusion boundary. Each respective flow has a velocity and a shear which exists between the relative difference in flow velocity of one flow in respect to the other. With regards to the relative size, and shape of the surfaces and spacing of the flow passage, absent any unexpected result, such modifications are within the skill of a person having ordinary skill in the art to optimize the flow interaction and thus would have been obvious to modify the radial spacing of the surfaces so that the inter-diffusion rate is optimized whereby it is old and well known that the flow characteristics are of a boundary transition is dependent upon the variables of the fluid material characteristics and the channel characteristics in a determination of the Reynolds number, since it has been held that, absent any unexpected result, a mere change in form or shape on the basis of

suitability, in this case the channel spacing or smoothness to optimize the Reynolds number is a matter of obvious mechanical design choice. In re Dailey, 149 USPQ 47 (CCPA 1976). A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955). It has also been held that discovering an optimum value, in this case the value of the channel wall spacing and smoothness of a channel wall, of a result effective variable (Reynolds number) involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

### ***Response to Arguments***

3. Applicant's arguments filed 5-23-2005 have been fully considered but they are not persuasive.

4. Applicant argues that the PTO has not set forth a prima facie case of obviousness, and argues "in accordance with applicant's novel method as claimed, the resulting interdiffusion passage with laminar shear is itself unexpected, this is because boundary layers are formed against both surfaces, and it is respectfully, submitted, not merely a design choice. It is certainly no obvious to take the device for joining fluid layers of the Weigl reference and use it for applicant's purpose.

5. In response, the office has pointed out, in the rejection above, the positive steps of the supplying of a 1<sup>st</sup> material and 2<sup>nd</sup> material in a flow path with an interdiffusion passage and respective flow rates as required by the claim(s) and the reasons and motivation for changing the flow channel geometry of the passage provided in the

method of operation. Applicant's allegation that the invention is itself unexpected is unsupported and has not shown any evidence of unexpected results, thus arguments are deemed unpersuasive.

6. Applicant's arguments on page 7, 2<sup>nd</sup> paragraph with regards to relatively moving surfaces is unpersuasive whereby the claims do not state any movement step of the surfaces. The claim only points out the use of a passage with surfaces but does not point out a step of moving the surfaces.

### ***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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8. The prior art made of record previously and not relied upon was cited as being considered pertinent to applicant's disclosure. US patent numbers: US 6281254, US 6134950, US 5971158, US 5932100, US 5858187, US 5716852.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tony G. Soohoo whose telephone number is (571) 272 1147. The examiner can normally be reached on 7-5PM, Tue-Fri (As of 9/05 Fax will be 571-273-8300.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker can be reached on 571-272-1151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Tony G Soohoo  
Primary Examiner  
Art Unit 1723

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